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Frederick Stentiford

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EXAMINER

COUSO, JOSE L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,027	Applicant(s) STENTIFORD, FREDERICK	
	Examiner Jose L. Couso	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/26/07, 7/6/07</u> . | 6) <input type="checkbox"/> Other: ____. |

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1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

2. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 21 defines a computer program embodying functional descriptive material (i.e., a computer program or computer executable code). However, the claim does not define a "computer-readable medium or computer-readable memory" and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The scope of the presently claimed invention

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encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on “computer-readable medium” or equivalent; assuming the specification does NOT define the computer readable medium as a “signal”, “carrier wave”, or “transmission medium” which are deemed non-statutory (refer to “note” below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Note:

“A transitory, propagating signal ... is not a “process, machine, manufacture, or composition of matter.” Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter.” (In re Nuijten, 84 USPQ2d 1495 (Fed. Cir. 2007)). Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a “signal”, the claim as a whole would be non-statutory. Should the applicant’s specification define or exemplify the computer readable medium or memory (or whatever language applicant chooses to recite a computer readable medium equivalent) as statutory tangible products such as a hard drive, ROM, RAM, etc, **as well as** a non-statutory entity such as a “signal”, “carrier wave”, or “transmission medium”, the examiner suggests amending the claim to include the disclosed tangible computer readable storage media, while at the same time excluding the intangible transitory media such as signals, carrier waves, etc.

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Merely reciting functional descriptive material as residing on a "tangible" or other medium is not sufficient. If the scope of the claimed medium covers media other than "computer readable" media (e.g., "a tangible media", a "machine-readable media", etc.), the claim remains non-statutory. The full scope of the claimed media (regardless of what words applicant chooses) should not fall outside that of a computer readable medium.

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

4. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 20 appears to define an

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apparatus using “means plus function” claim language. However, the specification does not disclose corresponding physical structure associated with each claim element, and the specification does indicate that the invention may be embodied as pure software on page 2, lines 2-5. Therefore, the claim as a whole appears to be nothing more than a collection of software elements, thus defining functional descriptive material per se.

Functional descriptive material may be statutory if it resides on a “computer-readable medium or computer-readable memory”. The claim(s) indicated above lack structure, and do not define a computer readable medium and are thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests:

1. Amending the claim(s) to embody the program on “computer-readable medium” or equivalent; assuming the specification does NOT define the computer readable medium as a “signal”, “carrier wave”, or “transmission medium” which are deemed non-statutory (refer to “note” below); or

2. Pointing out where the corresponding structure can be found in the specification that would clearly be indicative of a statutory apparatus, in a 112 6th paragraph sense.

Any amendment to the claim should be commensurate with its corresponding disclosure.

Note: “A transitory, propagating signal ... is not a “process, machine, manufacture, or composition of matter.” Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter.” (*In re Nuijten*, 84 USPQ2d 1495 (Fed. Cir. 2007)).

Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a “signal”, the claim as a whole would be non-statutory. Should the applicant’s specification define or exemplify the computer readable medium or memory (or whatever language applicant chooses to recite a computer readable medium equivalent) as statutory tangible products such as a hard drive, ROM, RAM, etc, **as well as** a non-statutory entity such as a “signal”, “carrier wave”, or “transmission medium”, the examiner suggests amending the claim to include the disclosed tangible computer readable storage media, while at the same time excluding the intangible transitory media such as signals, carrier waves, etc.

5. Claims 1-19 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the image processing method including steps of performing comparisons and computing is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of “performing comparisons” and “computing” to limit the steps and the claim language itself is sufficiently broad to read on a person mentally going through the steps.

6. The following is a quotation of the first and second paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, first and second paragraph, as attempting to define a product (i.e. machine or apparatus) entirely by virtue of its function, in the absence of any recited structure.

Products must distinguish over the prior art in terms of their structure (or structure + structure’s function when claimed functionally) rather than function alone (MPEP 2114). Therefore, an “apparatus” not having structural limitations fails to

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“particularly point out and distinctly claim...” the invention in accordance with 35 U.S.C. 112, 2nd paragraph.

Furthermore, while the specification disclosure may be enabling for a plurality of structural elements performing the claimed functions ³, the specification does not reasonably provide enablement for a single structural element (or no structural elements) performing all of the claimed functions. That is, given the claim in question, the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims (“A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph” because a single means claim covers “every conceivable means for achieving the stated purpose” and “the specification disclosed at most only those means known to the inventor” - *MPEP*, at *paragraph 2164.08(a)*).

Applicant is advised to define the apparatus by virtue of the individual structural element that serve to perform the individual functions recited in the corresponding method claim.

³ Even when an apparatus is disclosed as being computer implemented (e.g., software implemented on hardware), the requirement remains that there be some structure recited in the body of the claim (e.g., a processor and a memory storing a program which when implemented performs the method steps). For purposes of “means plus function” language, individual disclosed steps corresponding to computer program elements operating on a processor (e.g., inputting, filtering, detecting and resolving) may be considered as separate means (*Dossett*, 115 F.3d at 946–47, 42 USPQ2d at 1885).

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7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,934,415. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed towards the same subject matter.

The claims in the present application define the invention differently from the claims in the issued U.S. Patent No. 6,934,415, however they are not patentably distinguishable from the claims in the other copending applications. *In re White et al.*, 160 USPQ 417, *In re Thorington et al.*, 163 USPQ 644.

For example, comparing representative claim 1 of the present application with representative claim 1 of issued U.S. Patent No. 6,934,415. Claim 1 of the present application recites: a method of processing a digitally coded image in which picture elements are each represented by a colour value, comprising, for each of a plurality of said picture elements (Claim 1 of issued U.S. Patent No. 6,934,415 recites: a method of

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analyzing a pattern represented by an ordered set of elements each having a value comprising, in respect of at least some of said elements); performing a plurality of comparisons, each comparison comprising comparing a first picture element group which comprises the picture element under consideration and at least one further picture element in the vicinity thereof with a second picture element group which comprises a base picture element and at least one further picture element, the number of picture elements in the second group being the same as the number of picture elements in the first group and the position of the or each further element of the second group relative to the base picture element of the second group being the same as the position of the or a respective further element of the first group relative to the picture element under consideration, wherein each comparison determines whether the two groups match in the sense that they meet a criterion of similarity and when at least one comparison results in a match, computing a replacement colour value for the picture element under consideration, the replacement colour value being a function of the colour value for the base picture element of the or each second group for which a match was obtained (Claim 1 of issued U.S. Patent No. 6,934,415 recites: and generating for the test group a distinctiveness measure as a function of the number of comparison groups for which the mismatch decision is that the test group does not match the comparison group, selecting a group of test elements comprising at least two elements of the ordered set, selecting a group of comparison elements comprising at least two elements of the ordered set, wherein the comparison group has the same number of elements as the test group and wherein the elements of the comparison group have

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relative to one another the same positions in the ordered set as have the elements of the test group, comparing the value of each element of the test group with the value of the correspondingly positioned element of the comparison group in accordance with a predetermined match criterion to produce a decision that the test group matches or does not match the comparison group, selecting further said comparison groups and comparing them with the test group).

As the comparison shows the difference relates to the replacing a colour value. In both sets of claims the method is comparing picture elements and the processing is carried out on the data and/or elements and in no way affects how the data would be received from an input, processed and output within the context of the claims. Therefore, the replacing of a colour value would have been obvious to one of ordinary skill in the art at the time of the claimed invention.

Claims 2-21 recite limitations which are similar to limitations recited in claims 1-24 of issued U.S. Patent No. 6,934,415.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Brett (U.S. Patent No. 5,850,471).

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With regard to claim 1, Brett describes performing a plurality of comparisons, each comparison comprising comparing a first picture element group which comprises the picture element under consideration and at least one further picture element in the vicinity thereof (refer for example to column 21, line 67 through column 22, line 5, and column 22, lines 27-28) with a second picture element group which comprises a base picture element and at least one further picture element (refer for example to column 21, line 67 through column 22, line 5, and column 22, lines 29-30), the number of picture elements in the second group being the same as the number of picture elements in the first group and the position of the or each further element of the second group relative to the base picture element of the second group being the same as the position of the or a respective further element of the first group relative to the picture element under consideration, wherein each comparison determines whether the two groups match in the sense that they meet a criterion of similarity; and when at least one comparison results in a match, computing a replacement colour value for the picture element under consideration, the replacement colour value being a function of the colour value for the base picture element of the or each second group for which a match was obtained (refer for example to column 23, lines 30-40).

As to claim 2, Brett describes including identifying picture elements which meet a criterion of distinctiveness, and computing a replacement colour value only for picture elements not meeting the distinctiveness criterion (refer to column 22, lines 4-5).

In regard to claim 3, Brett describes wherein the step of identifying picture elements which meet a criterion of distinctiveness is performed in advance, and the

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comparisons are performed only for picture elements not meeting the distinctiveness criterion (refer for example to column 23, lines 30-40).

With regard to claim 4, Brett describes wherein the criterion of distinctiveness for a picture element is that the number of matches obtained for that picture element exceeds a threshold (refer for example to column 23, lines 30-40).

As to claim 5, Brett describes wherein the selection of the or each further picture element of the first group is selected in a random or pseudo-random manner (refer for example to column 22, lines 1-5, the group is random in the sense that all the pixels within an image are compared, and all the pixels within an image have different random hue, saturation and luminance).

In regard to claim 6, Brett describes wherein the selection of the or each further picture element of the first group is selected in a random or pseudo-random manner from picture elements lying within a predetermined distance of the element under consideration (refer for example to column 22, lines 1-5, the group is random in the sense that all the pixels within an image are compared, and all the pixels within an image have different random hue, saturation and luminance).

With regard to claim 7, Brett describes wherein the further elements are selected afresh following a match (refer for example to column 22, lines 1-5, this occurs as the matrix is iterated throughout the whole image).

As to claim 8, Brett describes wherein the selection of the base picture element of the second group is selected in a random or pseudo-random manner (refer for

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example to column 22, lines 1-5, the group is random in the sense that all the pixels within an image are compared, and all the pixels within an image have different random hue, saturation and luminance).

In regard to claim 9, Brett describes wherein the selection of the base picture element of the second group is selected in a random or pseudo-random manner from picture elements lying within a predetermined distance of the element under consideration (refer for example to column 22, lines 1-5, the group is random in the sense that all the pixels within an image are compared, and all the pixels within an image have different random hue, saturation and luminance).

With regard to claim 10, Brett describes wherein the base picture element for the second group is selected afresh for each comparison (refer for example to column 22, lines 1-5, this occurs as the matrix is iterated throughout the whole image).

As to claim 11, Brett describes wherein the image is a monochrome image and the colour value is a single, luminance component (refer for example to column 14, lines 1-2 and column 17, lines 46-48).

In regard to claim 12, Brett describes wherein the image is a colour image and the colour value has three components (refer for example to column 14, lines 1-2 and column 17, lines 46-48).

With regard to claim 13, Brett describes wherein the match criterion is that no component of any picture element of the first group differs from the corresponding

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component of the spatially corresponding element of the second group by more than a threshold amount (refer for example to column 23, lines 30-40).

As to claim 14, Brett describes wherein the replacement colour value for a pixel is a function also of its existing colour value (refer for example to column 22, lines 1-5).

In regard to claim 15, Brett describes wherein the replacement colour value is the average of the colour value for the picture element under consideration and the colour value for the base picture element of the or each second group for which a match was obtained (refer for example to column 22, lines 1-5).

With regard to claim 16, Brett describes wherein the replacement colour value is that one of a predetermined set of colour values which is closest to the average of the colour value for the picture element under consideration and the colour value for the base picture element of the or each second group for a match was obtained (refer for example to column 22, lines 1-5).

As to claim 17, Brett describes including the step of processing the processed image again (refer for example to column 22, lines 1-5, this occurs as the matrix is iterated throughout the whole image).

In regard to claim 18, Brett describes including the step of applying spatial filtering to the processed image (refer for example to column 22, lines 1-5, the 3 x 3 and 5 x 5 filters are spatial filters).

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With regard to claim 19, Brett describes including the step of encoding the processed image using a compression algorithm (refer to column 12, lines 10-14).

As to claim 20, Brett describes an image processing apparatus comprising means for storing an image and means arranged in operation to perform the steps of claim 1 (see Figures 4A-B which is the apparatus which carries out the method).

In regard to claim 21, Brett describes a computer program comprising a data carrier having stored thereon a set of instructions for performing the method of claim 1 (refer for example to column 22, lines 7-38).

11. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gharavi, Moriya et al. and Xu et al. all disclose systems similar to applicant's claimed invention.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose L. Couso whose telephone number is (571) 272-7388. The examiner can normally be reached on Monday through Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner, can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jose L. Couso/
Primary Examiner, Art Unit 2624
February 23, 2009